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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)	
Office Action Summary	10/706,724	RAMPRASHAD, SEAN ANTHONY	
	Examiner	Art Unit	
	Henry Lam	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>12 November 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-34</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-34</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date <u>See Continuation Sheet</u>.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :14 February 2005 and 12 November 2003.

DETAILED ACTION

Claim Objections

1.   Note: The phrase "**adapted to**" recited in claim 14 (lines 1, 3, 6 & 8), claim 17 (line 2), claim 18 (line 2), claim 19 (line 1), claim 20 (line 1), claim 23 (line1), claim 24 (lines 1 & 2), claim 26, lines 1, 4, 6, 9, 12 & 14), claim 29 (lines 3 & 5), claim 30 (lines 3 & 5), claim 31 (lines 3 & 9), claim 33 (line 7); and the phrase "**capable of**" recited in claim 33 (lines 2 & 3) may be not positively recited claim limitations. Therefore, the limitations after the phrase are not considered the claim limitation. It is suggested that the applicant remove the phrase.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.   Claims 1-25, 31-32, and 34-35 are rejected under 35 U.S.C. 102(b) as being anticipated by **Leach, JR, et al (US 2002/0089994 A1).**

For claim 1, **Leach, JR, et al** teach a method of processing data streams in a contention-

based WLAN system (fig. 3, WLAN and its data streams process), the method

comprising:

(A) generating two or more sub-streams corresponding to a first data stream (para 0057,

lines 4-9, fig. 3 block 301 generates two or more sub-streams);

(B) assigning priority to each sub-stream, wherein at least two sub-streams have different

priorities (para 0058, lines 1-7, priority assign to Q0-QN); and

(C) transmitting data corresponding to each sub-stream based on the assigned priority

(para 0058, lines 7-10, transmitting base on priority during contention period).

For claim 2, **Leach, JR, et al** teach wherein the contention-based WLAN system

conforms to an IEEE 802.11 standard (para 0058, line 7, IEEE 802.11 support

contention-based WLAN) and supports a quality of service (QoS) facility (para 0063, line

12, supports QOS).

For claim 3, **Leach, JR, et al** teach wherein the two or more sub-streams comprise a base

sub-stream and at least one enhancement sub-stream (para 0057 and fig. 3 block 301

generates two or more sub-streams and the setting additional parameters to enhancement

sub-stream in transmission).

For claim 4, **Leach, JR, et al** teach wherein the first data stream is a hierarchical stream

and step (A) comprises partitioning the hierarchical stream based on the hierarchy of the

stream (para 0057, the hierarchical stream sort, queue and priority transmit process).

For claim 5, **Leach, JR, et al** teach wherein the first data stream is an embedded stream and step (A) 20 comprises generating the two or more sub-streams using an embedded encoder (para 0099, lines 11-16, sub-streams or frames encoding).

For claim 6, **Leach, JR, et al** teach further comprising, for each sub-stream, accumulating data corresponding to the sub-stream in a corresponding transmission queue (para 0059, the sub-stream is arranged in the queue and corresponding to the transmission queue).

For claim 7, **Leach, JR, et al** teach further comprising, for each queued data packet, (i) running a timer having a threshold value (para 0059, lines 11-15, queue mark running on time base) and (ii) discarding the data packet without transmission, when the timer reaches the threshold value (para 0116, lines 14-22, reaching threshold value discards the frame).

For claim 8, **Leach, JR, et al** teach wherein, for each enhancement packet, the timer starts when a corresponding base packet is transmitted (para 0107, lines 11-15, timer starts).

For claim 9, **Leach, JR, et al** teach wherein timers corresponding to different queues have different threshold values (para 0059, lines 11-15, queue mark running on time base).

For claim 10, **Leach, JR, et al** teach wherein step (B) comprises, for each sub-stream,

selecting parameters of a corresponding QoS parameter set (para 0094, lines 6-10, QoS

parameter set).

For claim 11, **Leach, JR, et al** teach further comprising:

(D) generating two or more sub-streams corresponding to the transmitted data (para 0057,

lines 4-9, fig. 3 block 301 generates two or more sub-streams); and

(E) processing the sub-streams of step (D) to generate an output data stream

corresponding to the first data stream (para 0060, lines 1-4, transmit scheduler handles

the output data stream transmission corresponding to all data stream).

For claim 12, **Leach, JR, et al** teach further comprising:

generating two or more sub-streams corresponding to a second data stream; and

assigning priority to each of the sub-streams (para 0057, lines 14-18, priority parameter

set).

For claim 13, **Leach, JR, et al** teach wherein at least one sub-stream corresponding to the

first data stream and at least one sub-stream corresponding to the second data stream have

the same priority (para 0058, lines 1-7, priority arrangement).

For claim 14, **Leach, JR, et al** teache at a transmitting station in a contention-based

WLAN system, apparatus (fig. 3, block 223, process data streams for contention-base

WLAN): **adapted to** process data streams (fig. 3, block 223, **adapted to** process data

streams), the apparatus comprising:

(A) a device (fig. 3, block 303, data streams or frames processor) **adapted to** generate

two or more sub-streams corresponding to a first data stream; and

(B) a controller coupled to a transmitter, wherein:

the transmitter (fig. 3, block 307, transmission scheduler) is **adapted to** transmit data

corresponding to the two or more sub-streams; and

the controller is adapted to (i) assign priority to each sub-stream, wherein at least two

sub- streams have different priorities (para 0058, lines 7-10, transmitting base on priority

during contention period) and (ii) apply sub-stream data to the transmitter based on the

assigned priority (para 0072, lines 19-25, transmission based on the assigned data stream

priority).

For claim 15, **Leach, JR, et al** teach wherein the contention-based WLAN system

conforms to an IEEE 802.11 standard (para 0058, line 7, IEEE 802.11 support

contention-based WLAN) and supports a quality of service (QoS) facility (para 0063, line

12, supports QOS);

For claim 16, **Leach, JR, et al** teach wherein the two or more sub-streams comprise a

base sub-stream and at least one enhancement sub-stream (para 0057, fig. 3 block 301

generates two or more sub-streams and the setting additional parameters to enhancement

sub-stream in transmission);

For claim 17, **Leach, JR, et al** teach wherein the first data stream is a hierarchical stream

and the device comprises a partitioner **adapted to** generate the two or more sub-streams

based on the hierarchy of the stream (para 0057 and fig. 3 blocks 301 & 303, the

hierarchical stream sort, queue and priority transmit process);

For claim 18, **Leach, JR, et al** teach wherein the first data stream is an embedded stream

and the device comprises an embedded encoder **adapted to** generate the two or more

sub-streams based on scalable coding (para 0099, lines 11-16, sub-stream (frame)

encoding);

For claim 19, **Leach, JR, et al** teach further comprising, for each sub-stream, a buffer

adapted to queue data corresponding to the sub-stream before application to the

transmitter (fig. 3, block 305, queuing buffer);

For claim 20, **Leach, JR, et al** teach the controller (para 0010, lines 11-14, controller) is

further **adapted to**, for each queued data packet, (i) run a timer having a threshold value

(para 0059, lines 11-15, queue mark running on time base) and (ii) instruct the

corresponding buffer to discard the data packet without application to the transmitter,

when the timer reaches the threshold value (para 0116, lines 14-22, reaching threshold

value discards the frame);

For claim 21, **Leach, JR, et al** teach wherein, for each enhancement packet, the timer

starts when a corresponding base packet is transmitted (para 0107, lines 11-15, timer

starts);

For claim 22, **Leach, JR, et al** teach wherein timers corresponding to different buffers

have different threshold values (para 0059, lines 11-15, queue mark running on time

base);

For claim 23, **Leach, JR, et al** teach wherein the controller is **adapted to**, for each sub-

stream, select parameters of a corresponding QoS parameter set (para 0094, lines 6-10,

controller and QoS parameter set);

For claim 24, **Leach, JR, et al** teach further comprising a device **adapted to** generate

two or more sub-streams corresponding to a second data stream, wherein the controller is

adapted to assign priority to each the sub-stream(fig. 3, blocks 301 & 303, process

continuing data stream and arranges to transmit);

For claim 25, **Leach, JR, et al** teach wherein at least one sub-stream corresponding to the

first data stream and at least one sub-stream corresponding to the second data stream have

the same priority (para 0058, lines 7-10, transmission base on priority during contention

period).

For claim 31, **Leach, JR, et al** teach a contention-based WLAN system, comprising a

transmitting station and a receiving station (fig. 1, block 103, transceiver), wherein:

the transmitting station is **adapted to**:generate two or more sub-streams corresponding to

a first data stream; assign priority to each sub-stream, wherein at least two sub-streams

have different priorities; and transmit data corresponding to the two or more sub-streams

based on the assigned priority (fig. 1, blocks 103 & 113, transmitting station); and the

receiving station is **adapted to**: generate two or more sub-streams corresponding to data

received from the transmitting station; and process the two or more generated sub-

streams to generate an output data stream corresponding to the first data stream (fig. 1,

blocks 103 & 112, receiving station).

For claim 32, **Leach, JR, et al** teach wherein the contention-based WLAN system

conforms to an IEEE 802.11 standard (para 0058, line 7, IEEE 802.11 support

contention-based WLAN) and supports a quality of service (QoS) facility (para 0063, line

12, supports QOS);

For claim 33, **Leach, JR, et al** teach a wireless network that supports priority-based

transmission of data streams, a transmitting station (para 0058, lines 1-7, priority assign

to Q0-QN) **capable of** transmitting one or more data streams, wherein the transmitting

station(fig. 1, blocks 103 & 113, transmitting station) is **capable of**:

for at least one data stream, generating two or more sub-streams corresponding to the

data stream, each sub-stream having a different assigned priority level; and

transmitting the two or more sub-streams based on the assigned priority levels, wherein,

the transmitting station is **adapted to** selectively drop one or more sets of data in one or

more sub-streams having relatively low priority levels when warranted by existing

transmission characteristics (para 0058, lines 1-10, transmitting base on priority during

contention period).

For claim 34, **Leach, JR, et al** teach wherein the wireless network is a wireless network

conforming to an IEEE 802.11 standard (para 0058, line 7, IEEE 802.11 support

contention-based WLAN).

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(e) the invention was described in (1) an application for patent, published under section
122(b), by another filed in the United States before the invention by the applicant for
patent or (2) a patent granted on an application for patent by another filed in the United
States before the invention by the applicant for patent, except that an international
application filed under the treaty defined in section 351(a) shall have the effects for
purposes of this subsection of an application filed in the United States only if the
international application designated the United States and was published under Article
21(2) of such treaty in the English language.

5.   Claim 26 is rejected under 35 U.S.C. 102(e) as being anticipated by **Gubbi et al. (US**

6,865,609 B1).

For claim 26, **Gubbi et al** teach at a receiving station in a contention-based WLAN

system, apparatus adapted to generate an output data stream corresponding to a first data

stream applied to a transmitting station in the system, the apparatus comprising:

(A) a processor coupled to a receiver, the processor **adapted to** generate two or more

sub- streams corresponding to data received by the receiver from the transmitting station

(column 20, lines 14-29, receives multiple stream frames from the transmission device)

(B) a first device coupled to the processor and **adapted to** process the two or more sub-

streams generated by the processor to generate the output data stream, wherein the

transmitting station comprises:

(i) a second device **adapted to** generate two or more sub-streams corresponding to the

first data stream (column 3, lines 61-65, generates sub-streams); and

(ii) a controller coupled to a transmitter, wherein:

the transmitter is **adapted to** transmit data (column 3, line 67, transmissions data)

corresponding to the two or more sub-streams generated by the second device; and the

controller is **adapted to** (i) assign priority to each sub-stream generated by the second

device, wherein at least two of the sub-streams have different priorities (column 20, lines

51-53, assign priority) and (ii) apply sub-stream data to the transmitter based on the

assigned priority (column 20, lines 53-64, transmitting based on assign priority).

For claim 27, **Gubbi et al** teach wherein the contention-based WLAN system conforms

to an IEEE 802.11 standard and supports a quality of service (QoS) facility (column 4,

lines 58-67; and column 5, lines 1-6, IEEE 802.11 and support QoS facility).

Claim Rejections - 35 USC § 103

6.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
>
> described as set forth in section 102 of this title, if the differences between the subject
>
> matter sought to be patented and the prior art are such that the subject matter as a whole
>
> would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which the subject matter pertains. Patentability shall not be negatived

by the manner in which the invention was made.

8.   Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gubbi et al. (US 6,865,609 B1)** in view of **Leach, JR, et al (US 2002/0089994 A1).**

For claim 28, **Gubbi et al** disclose the receiver in the above paragraph.

Gubbi et al disclose all the subject matter of the claimed invention except wherein:

the two or more sub-streams generated by the second device comprise a base sub-stream

and at least one enhancement sub-stream; and

the two or more sub-streams generated by the processor comprise a base sub-stream and

at least on enhancement sub-stream.

Leach, JR, et al from the same or similar fields of the endeavor teach wherein:

the two or more sub-streams generated by the second device comprise a base sub-stream

and at least one enhancement sub-stream (para 0057 and fig. 3 block 301 generates two

or more sub-streams and the setting additional parameters to enhancement sub-stream in

transmission); and the two or more sub-streams generated by the processor (fig. 3, block

301) comprise a base sub-stream and at least on enhancement sub-stream (para 0057 and

fig. 3, block 301 generates two or more sub-streams and the setting additional parameters

to enhancement sub-stream in transmission).

Thus, it would have been obvious for the person of ordinary skill in the art at the time of

the invention to use the processor and partition technique by **Leach, JR, et al** into the

receiver processor **Gubbi et al.**

The rationale for using the processor and partition technique by **Leach, JR, et al** into the

receiver processor of **Gubbi et al** that it provides enhance WLAN multimedia

communications and handling the contention.

For claim 29, **Gubbi et al** disclose the receiver in the above paragraph and the first

device comprises a reconstructor **adapted to** combine the two or more sub-streams

generated by the processor to produce the output data stream (column 11, lines 40-60,

reconstruct frames).

Gubbi et al disclose all the subject matter of the claimed invention except wherein:

the first and output data streams are hierarchical streams;

the second device comprises a partitioner **adapted to** generate, using scalable coding, the

two or more sub-streams generated by the second device.

Leach, JR, et al from the same or similar fields of the endeavor teach wherein:

the first and output data streams are hierarchical streams;

the second device comprises a partitioner **adapted to** generate, using scalable coding, the

two or more sub-streams generated by the second device (para 0057 and fig. 3 blocks 301

& 303, the hierarchical stream sort, queue and priority transmit process).

.Thus, it would have been obvious for the person of ordinary skill in the art at the time of

the invention to use the processor and partition technique by **Leach, JR, et al** into the

receiver processor of **Gubbi et al.**

The rationale for using the processor and partition technique by **Leach, JR, et al** into the receiver processor of **Gubbi et al** that it provides enhance WLAN multimedia communications, reconstruct frames and handling the contention.

For claim 30, **Gubbi et al** disclose the receiver in the above and

the first device comprises an embedded decoder **adapted to** process the two or more sub-streams generated by the processor to produce the output data (column 3, lines 61-67, and column 4, lines 1-20, decoding and generating output data).

Gubbi et al disclose all the subject matter of the claimed invention except wherein:

the first and output data streams are embedded streams;

the second device comprises an embedded encoder **adapted to** generate the two or more sub-streams generated by the second device; **Leach, JR, et al** from the same or similar fields of the endeavor teach wherein:

the first and output data streams are embedded streams;

the second device comprises an embedded encoder **adapted to** generate the two or more sub-streams generated by the second device (para 0099, lines 11-16, sub-streams or frames encoding);

Thus, it would have been obvious for the person of ordinary skill in the art at the time of the invention to use the encode/decode technique by **Leach, JR, et al** into the processing transmit/receive data **Gubbi et al.**

The rationale for using the encode/decode technique by **Leach, JR, et al** into the

transmit/receive processor of **Gubbi et al** that it provides enhance WLAN multimedia

communications, reconstruct frames and handling the contention.

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

Kobayashi (US 7,269,184 B2) and **Abdo et al** (US 2004/0052257 A1) are all cited to

show systems, which are considered pertinent to the claimed invention.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Henry Lam whose telephone number is (571) 270-3122. The

examiner can normally be reached on Monday to Friday 8:00AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ricky Q. Ngo can be reached on (571) 272-3139. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HL

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER